

References:



Decreasing Pedestrian Safety Risk in Detroit

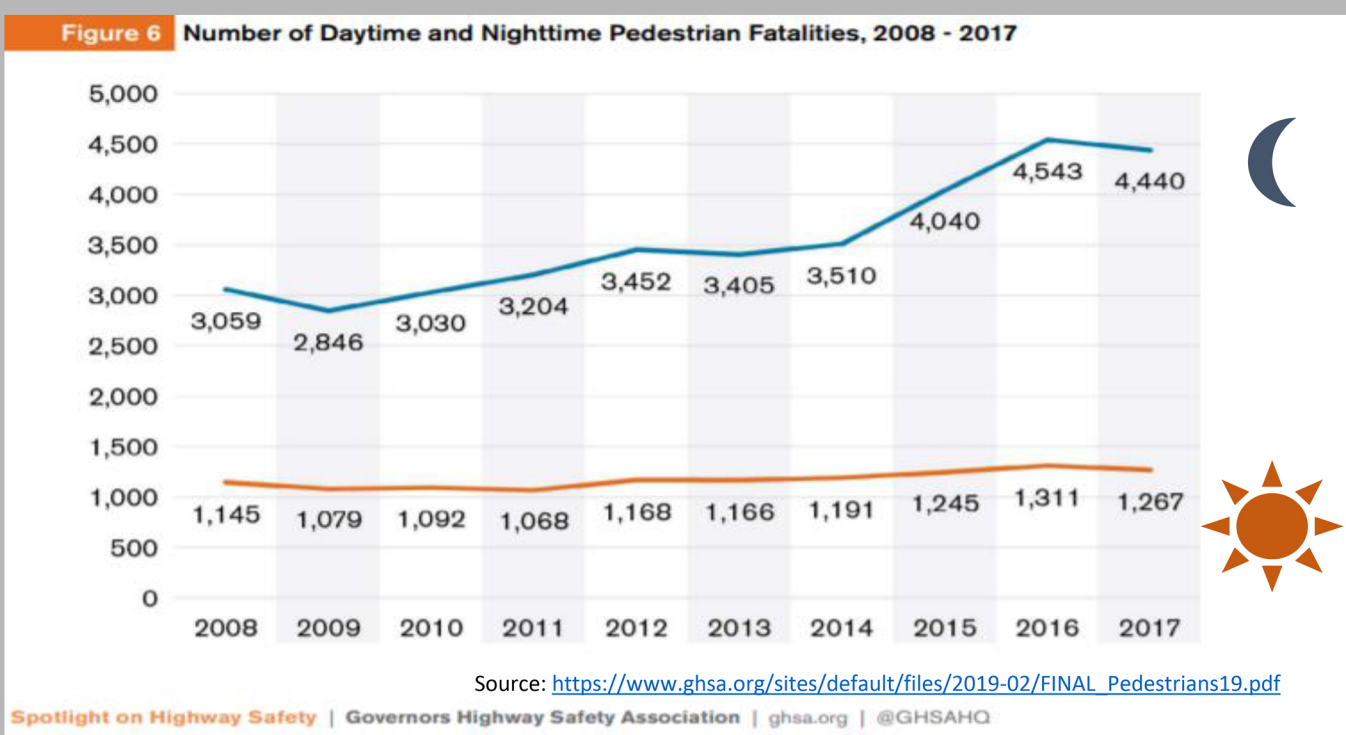
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Background

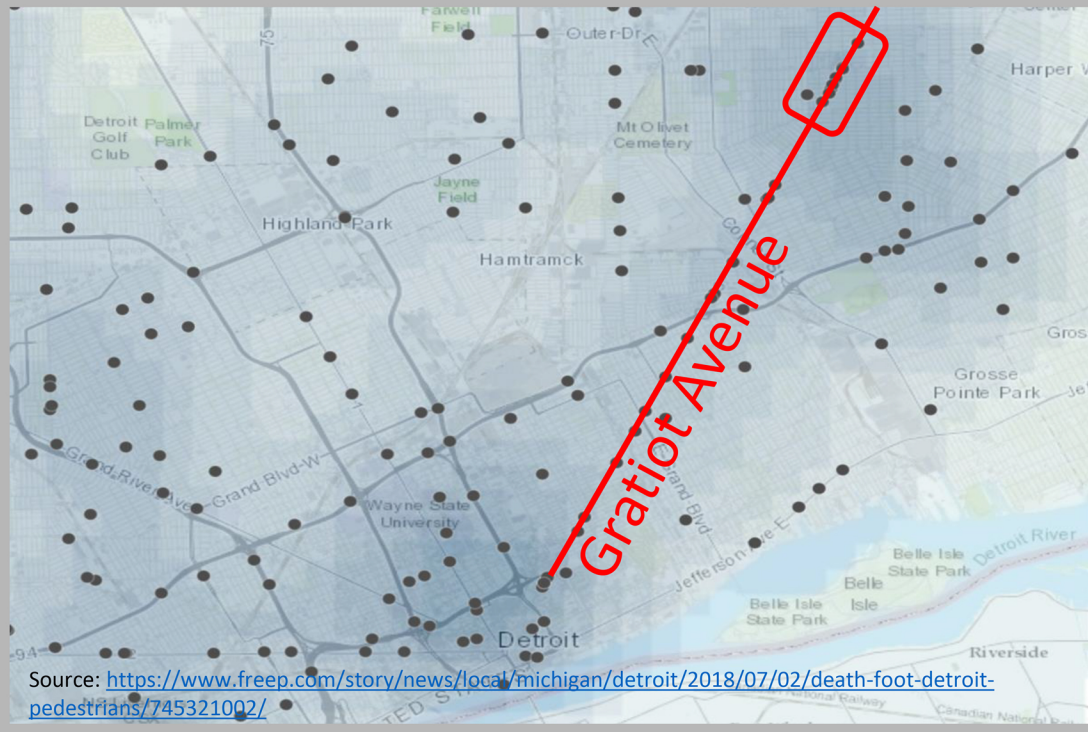
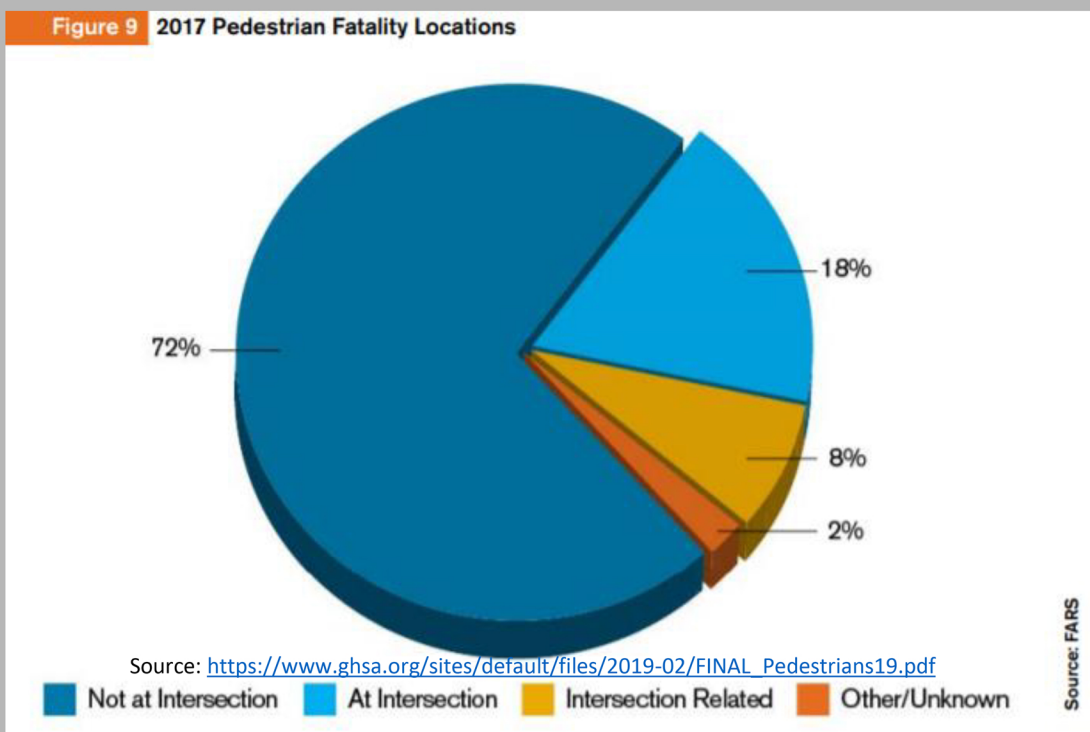
Annual traffic fatalities have increased by over 50% in the last decade

An increasing number of traffic fatalities occur at night

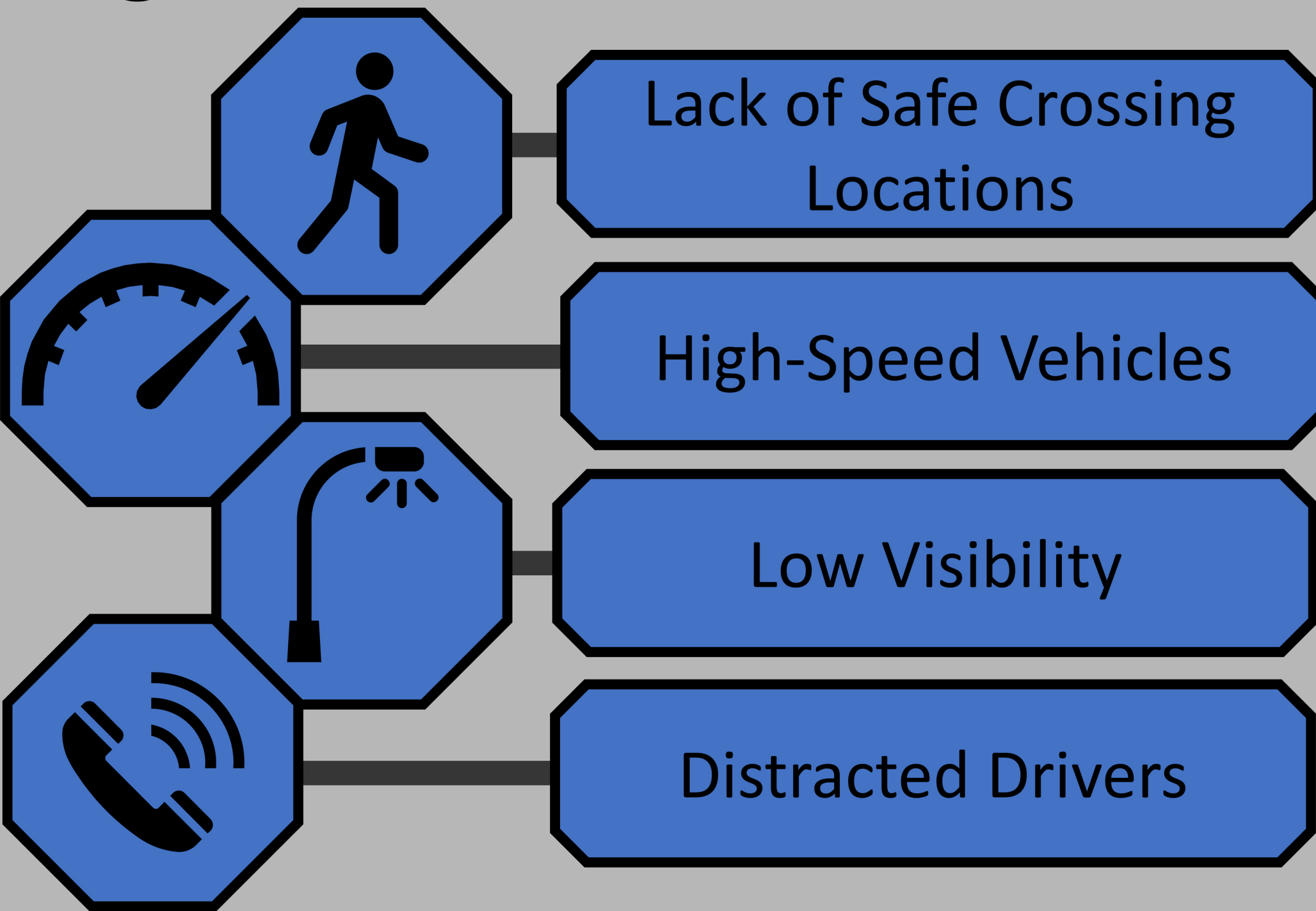


Most traffic fatalities occur outside of intersections

Map of pedestrian deaths in Detroit



Leading Causes of Pedestrian Fatalities



Process

What are the causes of death in Detroit?

- Determine common factors between locations of fatal accidents

What potential solutions are available?

- Determine what safety devices exist and how they are used

How cost-effective are the solutions?

- Analyze proposed solutions' costs and determine effectiveness

Which solution works best for the city?

- Use data from previous steps to propose viable solutions

Costs and Effectiveness for Various Safety Devices

Feature	Price Range (not including labor)	Drawbacks	Delays during installation?	Benefit
Speed Bumps	\$1.5k to \$2.5k each	Snowplows and emergency vehicles hindered	Yes	Speed reduction
Raised Crosswalks	\$8k each	High cost; snowplows and emergency vehicles hindered	Yes	Speed reduction
Streetlights	\$5k average (3k for foundation, 2-3k for pole, 1k for installation)	High cost; already being implemented	Possibly	Increased visibility
Rumble Strips	\$0.80 per foot	None	Yes	Speed reduction
Reflective Crosswalks	\$3.56 per foot of tape used	None	Possibly	Increased visibility
Mid-Street Islands	\$13k each	Decreased road space, which increases traffic density; high cost	Yes	Decreased pedestrian time spent on road
Speed Limit Signs	\$35-40 each	None	Possibly	Speed awareness
In-Street Lighting	\$18k	High cost	Yes	Increased visibility

Solutions

Allow pedestrians to cross the street in safe locations and let cars know where pedestrians will be crossing

Give more priority to pedestrians at intersections and eliminate risk from turning vehicles

High Cost

Crosswalks

Low Cost

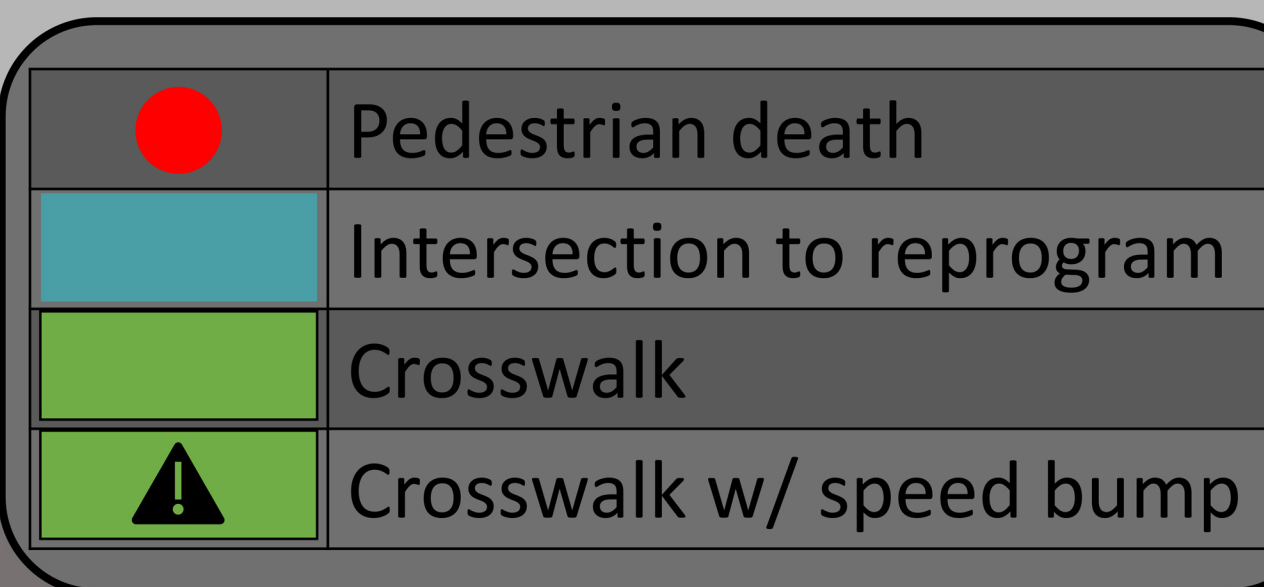
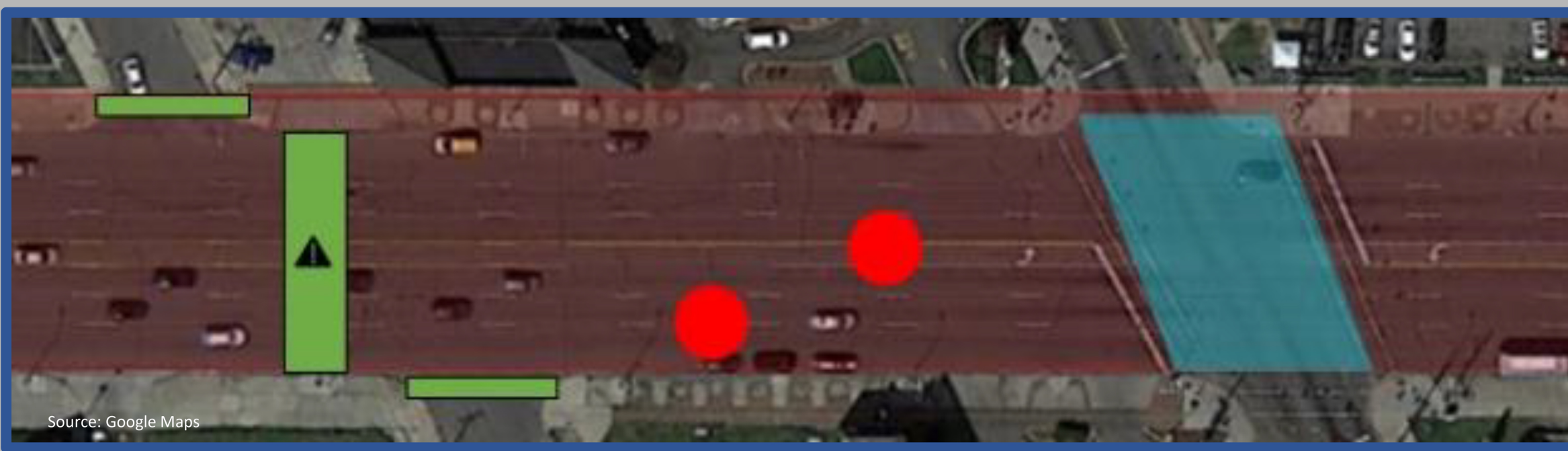
Change traffic light cycles

Speed Bumps

Lower speed limit and add speed limit signs

Force cars to slow down to avoid an uncomfortable jolt, but slow down emergency vehicles and can create issues with snowplows as well

Decrease vehicle speed by increasing awareness of speed limits, and lower the speed limits themselves



2014, Nighttime in unlit area

2013, Nighttime in unlit area

2009, Nighttime (lighting unknown)

2013, Nighttime in unlit area

2013, Nighttime, adequate lighting

2010, Nighttime in unlit area

2012 Nighttime in unlit area